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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,445	02/24/2004	Yunzhang Wang	5602	8505

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Brenda D. Wentz
Legal Department, M-495
PO Box 1926
Spartanburg, SC 29304

EXAMINER	
MATZEK, MATTHEW D	
ART UNIT	PAPER NUMBER
1794	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/785,445	WANG ET AL.	
	Examiner	Art Unit	
	MATTHEW D. MATZEK	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,8-27,32,33 and 40-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1-5,8-27,32,33 and 40-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Amendment

1. The amendment dated 12/19/2008 has been fully considered and entered into the Record. No claim amendments have been submitted at this time. Claims 1-5, 8-27, 32, 33 and 40-45 remain pending.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

2. Claims 1-5, 8-27, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otto (US 4,316,928) in view of Nun et al. (US 2003/0013795 A1).

a. Otto discloses a method of making a fiber containing substrate, including steps of providing a fiber containing substrate (10) having a first surface and a second surface (see Fig. 1), and face finishing at least the first surface of the substrate. The face finishing is a mechanical treatment of the substrate, accomplished by exposing at least the first surface of the substrate to one or more abrasive surfaces (11,11a). The process of Otto provides a substantially uniform modification to the surface of the fabric (abstract). A uniform modification of the surface of the fabric results in greater than 20% of said surface being treated. A wide variety of fabrics may benefit from being processed according Otto including woven, knitted and nonwoven fabrics (col. 6, lines 25-30). The face finishing forms integral microscopic surface structures, as in claim 1; see col. 3, lines 19-59, col. 6, lines 53-54 (disclosing that the finish is not apparent to the naked eye), and Figs. 9 and 17, showing 350x magnification of the surface.

b. Furthermore, the substrate of Otto does have integral microscopic surface structures including projections (see protrusions disclosed in col. 3, lines 22-25) and the method of abrading disclosed by Otto would clearly result in the fabric having a roughened surface. Example 1 looked at under magnification has filaments broken to some extent but are predominately extensively modified by the formation of lamella shaped protrusions on the fiber surfaces and by the formation of scar type surface modifications on the fiber surfaces. The Gessner-sanded samples by contrast show a substantial number of cut and broken fibers with only very minor modifications of the surface characteristics of the individual fibers. The current claims recite "portions having a plurality of substantially unbroken fibers" and as such Examiner takes the position that since Example 1 only has some broken filaments, there would necessarily be portions of the surface of the article containing a plurality of substantially unbroken fibers, thereby meeting the claim. Furthermore, the applied reference explicitly teaches the surface of the treated fabric has "few broken fibers although it may be characterized as having a very soft touch" (col. 2, lines 7-11). This teaching clearly provides for the claimed "portions having a plurality of substantially unbroken fibers".

c. Claims 1, 32, 40 and 44 recite the use of diamond grit having an average grit size of from about 600 to about 1200 to form the integral microscopic surface structures. Otto discloses the use of sanding paper of grit size of about 600 (col. 8, lines 18-25) as abrasive means in process that would form integral microscopic surface structures. Examiner takes the position that since abrasive means with common grit size are used by Applicant and Otto the two processes would form the same integral microscopic surface

structures. Otto fails to teach the use of a repellent component or the addition of small particles.

d. Nun et al. disclose a self-regenerating, self-cleaning hydrophobic surface formed when particles are secured on a carrier that is itself a mixture of particles and binder (abstract). Elevations and depressions are formed by particles being secured to the surface by the carrier [0030]. The preferred size of the particles ranges from 20 nm to 100 microns [0031]. The distance between adjacent particles on the surface ranges from 0 to 10 particle diameters [0032]. The particulate may be silica including fumed silica [0035]. The binding carrier that coats the surface of the article may be cross-linked [0040] and may comprise acrylates or urethane acrylates. It can be advantageous for the binding polymer to comprise compounds having fluorine-containing groups such as perfluorinated acrylic esters. The particles may be applied to fabrics for use as umbrellas [0065].

e. Since Otto and Nun et al. are from the same field of endeavor (i.e. treated fabrics), the purpose disclosed by Nun et al. would have been recognized in the pertinent art of Otto.

f. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Otto with the coating motivated by creating a self-cleaning, hydrophobic fabric as disclosed by Nun et al.

g. Although Otto and Nun et al. do not explicitly teach the claimed Roughness factor and integral microscopic structure size, it is reasonable to presume that said property and structure is inherent to the combined invention. Support for said presumption is found in

the use of like materials (mechanically surface-finished textile that requires 350x magnification to view the protrusions and the use of the same grit size to form said protrusions). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed Roughness factor and integral microscopic structure size would obviously have been present one the combined product is provided. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner,* et al. (CCPA) 186 USPQ 80.

h. Claim 27 is rejected as Otto provides a broad teaching as to the fabrics that may be surface-finished. This teaching is interpreted to include all conventional fabrics including a laid scrim.

4. Claims 40-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otto (US 4,316,928) in view of Nun et al. (US 2003/0013795 A1) as applied to claim 32 above, and further in view of Morrison (US 4,343,853). The disclosures of Otto and Nun et al. fail to teach the use of at least one additional layer of material.

a. Morrison teaches a "two-face" fabric comprising a visible face fabric and a backing fabric (col. 2, lines 10-68). A primary objective of the fabric is to create an article that is anti-microbial even though both fabric faces have not been treated (col. 3, lines 8-17).

b. Since Otto and Morrison are from the same field of endeavor (i.e. treated fabrics), the purpose disclosed by Morrison would have been recognized in the pertinent art of Otto.

c. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the combined invention of Otto and Nun et al. with the second fabric layer of Morrison motivated by imparting anti-microbial protection to two fabric faces while maintaining the advantages of naturally occurring, untreated fibers in one of the fabrics (abstract, Morrison).

Response to Arguments

5. Applicant's arguments filed 12/19/2008 have been fully considered but they are not persuasive.

6. Applicant argues that Otto fails to teach the use of the claimed diamond grit and the applied reference uses a grit size of 240 in all of the examples. The applied reference is not limited to its examples and should be considered in whole. Otto does not teach the specific use of diamond grit. Claims 1, 32, 40 and 44 recite the use of diamond grit having an average grit size of from about 600 to about 1200 to form the integral microscopic surface structures. Otto discloses the use of sanding paper of grit size of about 600 (col. 8, lines 18-25) as abrasive means in process that would form integral microscopic surface structures. This grit size overlaps with the claimed grit size of about 600 to about 1200. Examiner takes the position that since abrasive means with common grit size are used in the same manner by Applicant and Otto the two processes would form the same integral microscopic surface structures. Applicant is highly encouraged to provide evidence that the claimed invention and the article of Otto do not have similar structure, especially in light of the fact that they are co-owned.

7. Applicant argues that examples of Otto possess broken and/or cut fibers. Again, the applied reference is not limited to its examples and should be considered in whole. Applicant is

reminded that only "***portions*** having a plurality of substantially unbroken fibers" (emphasis added) is currently claimed. Therefore, there is no prohibition of broken fibers in the entire article or even in the claimed portions. Furthermore, Applicant is directed to column 2 of Otto, which states that the invention of Otto has "few broken fibers although it may be characterized as having a very soft touch" (col. 2, lines 7-11). This teaching clearly provides for the claimed "portions having a plurality of substantially unbroken fibers".

8. Applicant asserts that the limitation of "having a plurality of substantially unbroken fibers" has not been considered by Examiner. Applicant is reminded that only "***portions*** having a plurality of substantially unbroken fibers" (emphasis added) is currently claimed. Therefore, there is no prohibition of broken fibers in the entire article or even in the claimed portions. Furthermore, Applicant is directed to column 2 of Otto, which states that the invention of Otto has "few broken fibers although it may be characterized as having a very soft touch" (col. 2, lines 7-11). This teaching clearly provides for the claimed "portions having a plurality of substantially unbroken fibers".

9. Applicant continues to argue that Otto and Nun et al. are not from the same field of endeavor (i.e. treated fabrics), and therefore, the purpose disclosed by Nun et al. would not have been recognized in the pertinent art of Otto. Otto is directed to the mechanical surface finishing of textiles, such as a wide variety of fabrics including wovens, knits and nonwovens (col. 6, lines 25-28). The Nun et al. reference is directed to a self-regenerating, self-cleaning hydrophobic surface treatment for use on a variety of substrates including shower curtains, umbrellas and other non-rigid articles [0065] for outdoor use (abstract). Both inventions are directed to fabrics that have been treated to provide the final product with enhanced properties.

10. Applicant argues that there is no motivation, or apparent reason, to combine Otto with Nun et al. Applicant continues by arguing Otto does not teach or suggest the need for any further fabric treatments after the mechanical face-finishing of the fabric. A holding of obviousness can be based on a showing that there was "an apparent reason to combine the known elements in the fashion claimed." KSR, 127 S. Ct. at 1740-41, 82 USPQ2d at 1396. In other words, "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness,." ld., 127 S. Ct. at 1741, 82 USPQ2d at 1396 (quoting In re Kahn, 441 F.3d 977, 987, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)). However, this reasoning is not limited to the problem the patentee was trying to solve; "any need or problem known in the field of endeavor at the time of invention and addressed by the patent can provide a reason for combining the elements in the manner claimed," KSR, 127 S. Ct. at 1742, 82 USPQ2d at 1397 (emphasis added).The motivation to modify Otto comes from the secondary reference Nun et al. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the invention of Otto with the coating motivated by creating a self-cleaning, hydrophobic fabric as disclosed by Nun et al.

11. Applicant argues that even if the combination of references were made there is no reasonable expectation of success that modifying the substrates taught by Otto with the chemical treatment taught by Nun would result in Applicant's claimed invention and the substrates of Nun cannot be treated according to the processes of Otto. Examiner's combination of Otto and Nun et al. would result in the treating the fabric of Otto with the treatment of Nun et al. There is no evidence of record and no basis to believe that the polymeric coating and particles of Nun would

not adhere to the treated fabric of Otto or that doing so would adversely affect the integral microscopic surface structures.

12. Applicant's argue that the claimed Roughness Factor would not be inherent in the combination of Otto and Nun and would be willing to replicate Example 1 of Otto in combination with the chemical treatment of Nun. Although Otto and Nun et al. do not explicitly teach the claimed Roughness factor and integral microscopic structure size, it is reasonable to presume that said property and structure is inherent to the combined invention. Support for said presumption is found in the use of like materials (mechanically surface-finished textile that requires 350x magnification to view the protrusions and the use of the same grit size to form said protrusions). The burden is upon Applicant to prove otherwise. *In re Fitzgerald* 205 USPQ 594. In addition, the presently claimed Roughness factor and integral microscopic structure size would obviously have been present one the combined product is provided. Reliance upon inherency is not improper even though rejection is based on Section 103 instead of Section 102. *In re Skoner,* et al. (CCPA) 186 USPQ 80. Otto discloses the use of sanding paper of grit size of about 600 (col. 8, lines 18-25) as abrasive means in process that would form integral microscopic surface structures. This grit size overlaps with the claimed grit size of about 600 to about 1200. Examiner takes the position that since abrasive means with common grit size are used in the same manner by Applicant and Otto the two processes would form the same integral microscopic surface structures. Applicant is highly encouraged to provide evidence that the claimed invention and the article of Otto, both at a grit size of about 600, do not have similar structure, especially in light of the fact that they are co-owned.

13. Applicant argues Morrison fails to overcome the deficiencies of the combination of Otto and Nun et al. and that there is no motivation to combine Otto and Morrison. Examiner has only relied upon Morrison to provide for an additional layer of material. The other structural limitations have been provided for in the rejection section of this action. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the combined invention of Otto and Nun et al. with the second fabric layer of Morrison motivated by imparting anti-microbial protection to two fabric faces while maintaining the advantages of naturally occurring, untreated fibers in one of the fabrics (abstract, Morrison).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW D. MATZEK whose telephone number is (571)272-2423. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Tarazano can be reached on 571.272.1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew D Matzek/
Examiner, Art Unit 1794

/Norca L. Torres-Velazquez/
Primary Examiner, Art Unit 1794